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# POWER CHAINS IN A DIVISOR GRAPH

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## *ABSTRACT*

*The divisor graph of an associative ring R (denoted as DG(R)) was introduced by Satyanarayana, Srinivasulu.[9]. In this paper, we introduce a simple concept "Power Chain in a Divisor Graph" .We prove that if $0 \neq a \in R$ is nilpotent, then the power chain starting with a is of finite length. If DG(R) (the divisor graph of R) contains a power chain starting with $a \in R$ which is of infinite length, then $0 \neq a \neq 1$, a is non–idempotent and non–nilpotent element. We announce some basic results. Finally, we deduce that if R be an integral domain and $a \in R$, then $0 \neq a \neq 1$ if and only if the power chain starting with a (in DG(R)) is of infinite length.*

***KEYWORDS:*** *Associative Ring, Divisor Graph of a Ring, Complete Graph*

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